What Is Claimed Is:

1. A fuel injector (1), in particular for the direct injection of fuel into a combustion chamber of an internal combustion engine, having a valve-closure member (4), which cooperates with a valve-seat surface (6) formed on a valve-seat body (5) to form a sealing seat; and at least one spray-discharge orifice (7) provided downstream from the sealing seat, which has a guide region (38) and an exit region (39) arranged at its discharge-side end, the exit region (39) widening in a stepped manner by at least one first step (41) and/or at least in part continuously beginning with a transition (40) from the guide region (38) into the exit region (39),
wherein a fuel jet (42), which emerges from the guide region (38) at the transition (40) and widens essentially uniformly at a jet angle (46), passes a discharge-side end (43) of the exit region (39) with a gap dimension (47) of a gap (44) after a distance s, the gap dimension (47) being greater than zero and a first volume (45) remaining in the exit region (39) between the fuel jet (42) and the inner walls of the exit region (39).

2. The fuel injector as recited in Claim 1,
wherein the first volume (45) has a longitudinal cross-sectional area (Ag), and a coefficient (B) characterizing the first volume (45) is calculated according to the following equation: $B = \frac{|D \cdot \pi \cdot Ag|}{|d \cdot \pi \cdot s|}$
D being a first diameter D between the centers of mass (48) of the longitudinal cross-sectional area Ag, d being a second diameter d of the fuel jet (42) at the midpoint of distance s, and coefficient B being not smaller than 0.5 and not greater than 2.5.

3. The fuel injector as recited in Claim 1 or 2, wherein the gap dimension (47) is not greater than 0.3 mm and not smaller than 0.1 mm.

4. The fuel injector as recited in one of the Claims 1 through 3, wherein the guide region (38) and the exit region (39) are arranged coaxially with respect to one another.

5. The fuel injector as recited in one of the preceding claims, wherein the transition (40) widens conically in the discharge direction.

6. The fuel injector as recited in one of the preceding claims, wherein the exit region (39) is cylindrical.

7. The fuel injector as recited in one of the Claims 1 through 6,wherein the guide region (38) projects into the exit region (39).

8. The fuel injector as recited in Claim 7, wherein, at the discharge-side end of the transition (40), the exit region (39) at first widens continuously counter to the discharge direction.

9. The fuel injector as recited in one of the preceding claims, wherein the exit region (39) is cylindrical in the region of the discharge-side end (43).